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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,420	10/24/2001	Richard B. Ertel	907B.0002.U1(US)	7185
29683	7590	05/04/2005	EXAMINER	
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			DAVIS, CYNTHIA L	
			ART UNIT	PAPER NUMBER
			2665	
DATE MAILED: 05/04/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/037,420	Applicant(s) ERTEL ET AL. AK	
	Examiner Cynthia L Davis	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-4, 6-10, 12-16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Yun.

Regarding claim 1, within a coverage area of a base station (BS) having a multi-element antenna array, estimating a spatial signature vector (SSV) for a current subscriber station is disclosed in column 5, lines 45-47 (the spatial signature) and column 6, lines 33-36 (the array) of Yun. Using the estimated SSV as a weight vector is disclosed in column 6, lines 33-36. Determining the output power that is correlated with a system resource to be assigned; and assigning a system resource *e* to the current subscriber station that is determined to have the minimum output power is disclosed in column 5, lines 42-51 and column 3, lines 59-63.

Regarding claim 7, a synchronous space division multiple access is disclosed in Yun, column 5, line 32. A code division multiple access communications system is disclosed in column 2, lines 22-23. A data processor for estimating, within a coverage area of a radio base unit (RBU) having a multi-element antenna array, a spatial

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signature vector (SSV) for a current subscriber station is disclosed in column 5, lines 45-47 (the spatial signature) and column 6, lines 33-36 (the array) of Yun. Using the estimated SSV as a weight vector when determining the output power that is correlated with each of a plurality of spreading code sequences is disclosed in column 6, lines 33-36 and column 2, lines 22-23 (in the CDMA implementation, resources correlate to codes). Assigning a spreading code to the current subscriber station that is determined to have the minimum output power is disclosed in column 5, lines 42-51 and column 3, lines 59-63.

Regarding claim 13, a method for operating a synchronous space division multiple access is disclosed in Yun, column 5, line 32. A code division multiple access communications system for assigning spreading codes to users is disclosed in column 2, lines 22-23. Within a coverage area of a base station (BS) having a multi-element antenna array, estimating a spatial signature vector (SSV) for a current subscriber station is disclosed in column 5, lines 45-47 (the spatial signature) and column 6, lines 33-36 (the array) of Yun. Using the estimated SSV as a weight vector, determining the output power that is correlated with each of a plurality of spreading code sequences is disclosed in column 6, lines 33-36 and column 2, lines 22-23 (in the CDMA implementation, resources correlate to codes). Assigning a spreading code to the current subscriber station that is determined to have the minimum output power is disclosed in column 5, lines 42-51 and column 3, lines 59-63.

Regarding claims 2, 8, and 14, the step of determining the output power includes steering a beamformer toward the current subscriber station by setting the weight vector

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equal to the SSV is disclosed in column 5, lines 45-47 (determining the spatial weight vector) and column 26, lines 1-4 (disclosing using beamforming to determine weights).

Regarding claims 3, 9, and 15, the step of determining the output power includes determining the average squared value of the antenna array output that has been despread using a code i is disclosed in column 2, lines 22-23 (in the CDMA implementation, each channel is despread using a code) and column 12, lines 46.

Regarding claims 4, 10, and 16, the multi-element antenna array has M elements, and wherein the step of determining the output power operates an M -branch receiver to despread a signal received on each element with a spreading code i , to accumulate the despread signal over a symbol duration, to scale the accumulated signal by the weight vector, to sum all of the scaled values and to square the result, and to average the squared result over R samples to determine the output power for code i for the current subscriber station is disclosed in column 12, lines 36-65.

Regarding claims 6, 12, and 18, the value of R is varied as a function of at least a condition of the channel is disclosed in column 13, column 13, lines 2-7 (disclosing varying the number of samples that the power is determined over) and column 40, lines 15-16.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5, 11, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yun. R has a value in the range of about 16 symbols to about 64 symbols is missing from Yun. However, it is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on the applicant. In re Mason, 320 U.S.1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Boesch, 617 F2d 272, 205 USPQ 215 (CCPA 1980).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a long horizontal stroke extending to the right.

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600